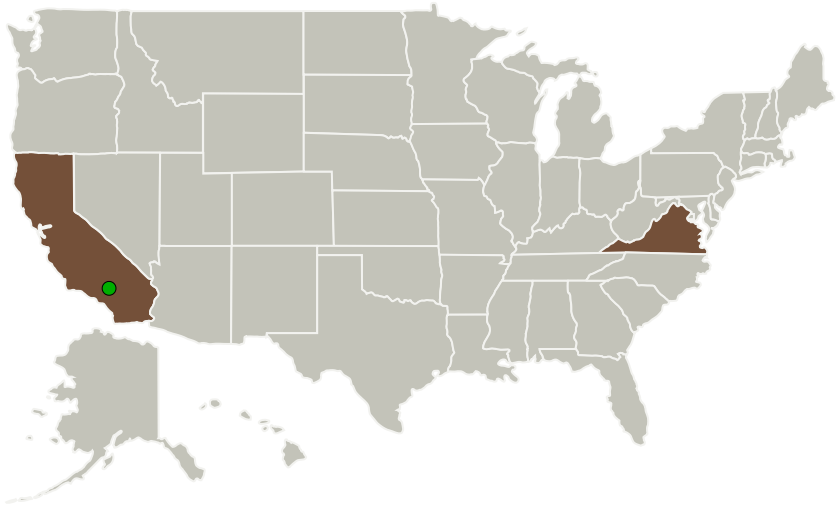
Rapid Automated Mission Planning System, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

The proposed innovation is an automated UAS mission planning system that will rapidly identify emergency (contingency) landing sites, manage contingency routing, and dynamically evaluate route changes for viability and safe operations in the NAS. Specifically, RAMPS will feature a pre-flight contingency planning capability that rapidly determines viable alternate/emergency landing sites based on a UAS's contingency ability and safe routing restrictions. RAMPS will include an in-flight dynamic contingency management capability that assesses ATC-requested re-routing and threats posed by weather to determine feasibility of modifications to the UAS flight trajectory. RAMPS can operate as a recommender system, providing operators with a narrow list of best options to help facilitate timely decision-making. RAMPS capabilities will provide UAS Operators with valuable time saving examination of a proposed route and possible contingency operations along that route – automating what has been an exceptionally tedious and lengthy manual process during mission planning. The in-flight component of RAMPS will provide the UAS operator with a dynamic mission evaluation tool – exceptionally important when a reconnaissance and surveillance mission is introduced into the routing planning process.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Mosaic ATM, Inc.	Lead Organization	Industry	Leesburg, Virginia
Armstrong Flight Research Center(AFRC)	Supporting Organization	NASA Center	Edwards, California

Primary U.S. Work Locations	
California	Virginia

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140262)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Mosaic ATM, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Dean Northcutt

Co-Investigator:

Dean Northcutt

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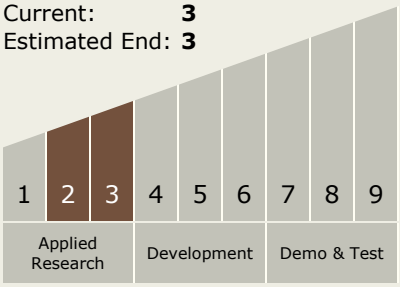
Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.1 Safe All Vehicle Access

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System